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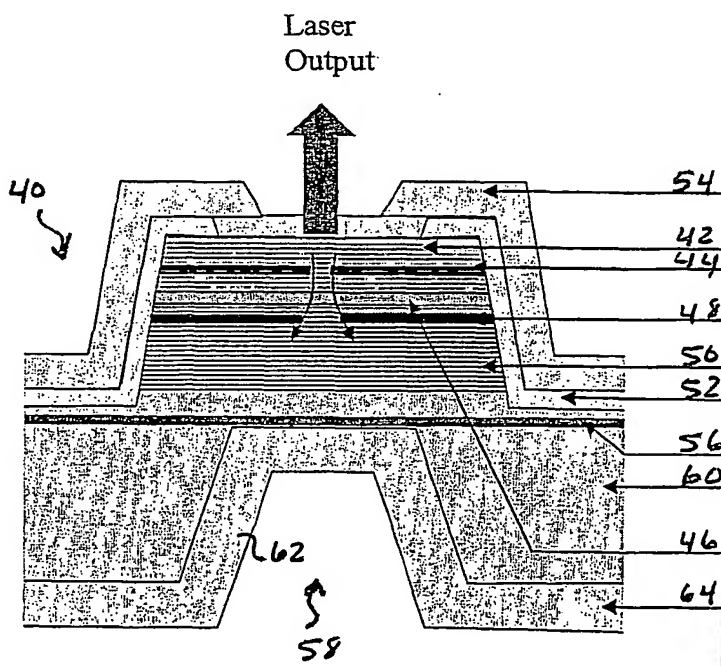
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- (71) Applicant (for all designated States except US): ARIZONA BOARD OF REGENTS [US/US]; Brickyard Suite 601, Room 691AA, 699 S. Mill Avenue, Tempe, AZ 85281 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): SAMAL, Nigamananda [IN/US]; 1717 S. Dorsey Lane, Apt. 2071, Tempe, AZ 85281 (US). JOHNSON, Shane [CA/US]; 742 E. Kesler Lane, Chandler, AZ 85225 (US). ZHANG,
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[Continued on next page]

(54) Title: HIGH POWER VCSELS WITH TRANSVERSE MODE CONTROL



(57) Abstract: A single mode high power laser device such as a VCSEL is formed with two oxide apertures, one on each side of the active region or cavity. The sizes of the apertures and the distances from the apertures to the cavity center are chosen or optimum, near-Gaussian current density distribution. The high power of a VCSEL thus formed is improved still more by good heat removal by either formation of a via through the substrate and gold plating on top and bottom of the VCSEL (including the via) or by lifting the VCSEL structure from the substrate and locating it on a heat sink.



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